BYLAW 11.2026
TOWN OF CORONACH
DUTCH ELM DISEASE BYLAW

A BYLAW of the Town of Coronach in the Province of Saskatchewan, to control and prevent the spread of Dutch Elm Disease.

THE COUNCIL FOR THE TOWN OF CORONACH IN THE PROVINCE OF SASKATCHEWAN ENACTS AS FOLLOWS:

1. SHORT TITLE
This Bylaw may be cited as The DED Bylaw.

2. DEFINITIONS
2.0 Act means *The Forest Resources Management Act– The Dutch Elm Disease Regulations, 2005*;

2.1 Dutch Elm Disease or D.E.D means the disease caused by the fungus Ophiostoma ulmi (Buis.) Nannf. (Syn. Ceratocystis ulmi (Buis.) or Ophiostoma novo-ulmi (Brasier) spread by tiny elm bark beetles that breed under the bark of dead or dying elm wood. If that wood contains the DED fungus, each new generation of beetles can infect healthy elms;

2.2 Elm Tree means any tree, either living or dead, or part of a tree, of the Ulmus genus, including elm wood;





2.3 Hazard Tree means any Elm Tree that in the opinion of an Inspector, has deteriorated to the point that it is capable of supporting elm bark beetle habitation or breeding;

2.4 Infected Tree means any Elm Tree that has tested positive for dutch elm disease by the Crop Protection Laboratory in Regina, SK or in the opinion of an Inspector is infected by Dutch Elm Disease;

2.5 Inspector means the Town Foreman;

2.6 Signs of Dutch Elm Beginning in late June to mid-July, look for:

Flagging - when the leaves of one or more branches near the top of the tree may wilt, curl, turn yellow and then brown, remaining on the tree.

Staining - an infected twig sample will have red streaks through the sapwood

The first signs of the disease is the upper branches dying and leaves turning yellow. Then, gradually the damage spreads to the rest of the tree which then eventually dies; and,

2.7 Town means the Town of Coronach.

3. INSPECTION

3.0 An Inspector has the powers and duties set out in the Act.

3.1 If you see signs of DED, report them to the Town as soon as possible.

4. HAZARD OF INFECTED TREES

4.0 Where an Inspector is of the opinion that an Elm Tree is a Hazard Tree or an Infected Tree, the Inspector may issue a notice to the landowner to provide a sample to the Town or the Inspector will take sample according to the following guidelines:

4.1 Examine the elm tree. Look for yellow/brown wilting or curling leaves.

4.2 Only sample an elm tree between June 1 and August 31 as infected leaves may be confused with leaves changing colour in the fall.

4.3 Sterilize your pruning tools with 10 per cent bleach, 70 per cent rubbing alcohol, or gas line antifreeze.

4.3.1. All vehicles used to transport Dutch elm trees shall be sterilized with a solution stated in section 4.3, after the vehicle is used, to avoid the transmission of the disease.

4.4 Choose a branch showing symptoms of wilting or flagging. Infected wood may appear to be stained brown. To confirm, peel back the bark and look for brown staining in the sapwood, or just under the bark. While staining is a strong indicator of DED, it is not always present in a diseased tree.

4.5 Select a smooth and straight branch, without any cankers or knots, and that is not dried out or dead. Ensure the branch is 1 to 1.5 cm in diameter (about the size of your index finger).

4.6 Cut three to four branches. Each piece should be 10 to 15 cm long (see photos 1 and 2). Please do not send elm leaves, elm trunks and large branches to the lab.

4.7 Remove the leaves and twigs from the cut pieces of the branch, but do not remove the bark.

4.8 Wrap all branch pieces in wax paper and secure with tape to prevent drying.

4.9 If sampling more than one tree, be sure to sterilize your pruning tools between trees. Keep each sample separate and clearly marked/identified.

4.10 Place the sample(s) in an envelope and make sure to include your name, address, phone number and the location of the tree(s).

4.11 Deliver the sample to the Town.

4.12 The Town will send the sample as soon as possible to:

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Crop Protection Laboratory (CPL)
1610 Park Street
Regina SK S4N 2G1

Photo 1: Example of good elm branch sample for DED testing



Photo 2: Preparing an elm branch for testing.



Important Points to Remember
Samples can be submitted between June 1 and August 31 each year. Samples will not be accepted after August 31.

If the sample needs to be stored temporarily prior to submission, it should be kept in a cooler or a fridge to prevent deterioration of the sample.

Ensure that the sample is taken from a branch showing symptoms; otherwise, the results may not be accurate.

WHEN TO EXPECT RESULTS
Testing begins in June. Samples are tested on a first come first serve basis. Results for diagnoses will be provided within fifteen (15) working days of the CPL receiving a viable sample.

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A positive result means DED is present on the sample and the tree must be removed. A negative result indicates the absence of the disease in the sample tested.

5. INFECTED TREES
5.1 Inspector will place a clear mark on the infected tree.

5.2 Trees confirmed to have DED (a positive test result) are to be removed within 72 hours and the wood must be promptly disposed of at the Town's appointed site, its Transfer site. The elm trees must either be burned or buried at least twenty-five (25) centimeters (ten inches) deep. The landowner must provide twenty-four (24) hour notice for elm tree disposal.

5.3 As per the Act and Regulations, the removal of the tree is the responsibility of the landowner. All costs associated with removing an infected elm tree shall be borne by the landowner.

5.4 If the landowner refuses to remove the infected tree after 72 hours, the Town will remove tree and invoice the landowner for work done.

5.5 The Saskatchewan Ministry of Environment will be notified of any positive results.

6. PRUNING OF ELM TREES
6.1 Every landowner of an Elm Tree shall keep the Elm tree pruned and free of wood that is dead or dying. If you are hiring a contractor to prune your elms, check their qualifications first. Under provincial regulations, all commercial pruners of elm trees must complete a recognized training program or be supervised by someone who has. Improper pruning can spread diseases or damage your trees.

6.2 No person shall prune an Elm Tree that is an Infected Tree or is a Hazard Tree unless pruning is authorized in writing by an Inspector.

6.3 No person shall prune an Elm Tree between April 1 and August 31 in any year unless:

a) the tree is damaged (e.g. due to a lightning strike or wind damage);

b) authorization is received; or

c) municipal staff feel trimming is necessary to ensure human safety or to avoid damage to property.

If you remove a piece of the tree during the ban, you must dispose of the wood right away at the Coronach Transfer Site. If you must remove the whole tree, the stump must also be removed below ground level (ten centimetres) to ensure it doesn't attract beetles.

7. REMOVAL OF TREES
Every person who removes an elm tree should remove the stump.

8. PLANTING OF ELM TREES
Planting of any type of elm tree is prohibited within the Town.

9. COMING INTO FORCE

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This Bylaw shall come into force on the day of its final reading.

_____ _____

Administrator Mayor

_____

Dated

Certified a true copy of Bylaw 11.2026

Date Carried on _____ [SEAL]

Resolution #_____/2026

_____Administrator

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Forest Pest Fact Sheet- Referenced from the Government of Saskatchewan website



Dutch Elm Disease, *(Ophiostoma ulmi.)* and *(Ophiostoma novo-ulmi)*

BACKGROUND

Dutch elm disease (DED) is caused by two species of fungus. It can be spread by tiny elm bark beetles, from elm to elm via the trees' root systems, or by contaminated tree pruning tools. The fungus blocks the elm's water and nutrient conducting system. The elm tree can die over a period of two to three years, or in as little as three weeks.

DISTRIBUTION

First identified in the province in Regina, Saskatchewan in 1981, DED can now be found in most areas of southeast Saskatchewan. Since 2007, the extent of DED has remained consistent; however, the distribution of the disease has varied. Major river systems such as the Qu'Appelle, Saskatchewan, Assiniboine, and Souris have sustained high rates of mortality to their American elm tree populations due to DED since the 1980s. Over the past 2 decades, DED has caused the death of many American elm trees along these river valleys in spite of management activities which typically include early detection followed by rapid removal and sanitation activities.

DESCRIPTION OF LIFE STAGES

Ophiostoma spp. produces two types of asexual spores:
Conidia (sticky) produced on synnema (asexual fruiting body) in bark and tunnels of dying trees. Conidia germinate on healthy elm forming mycelia which grow and penetrate the xylem through border pits (holes) in xylem cell wall.

Asexual spores (conidia)

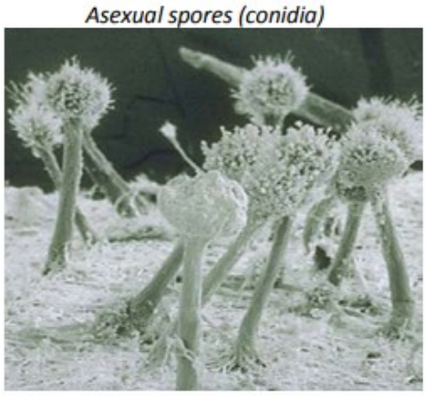


Image: M.F. Brown and H.G. Brotzman

Mycelial growth in xylem cells of elm tree

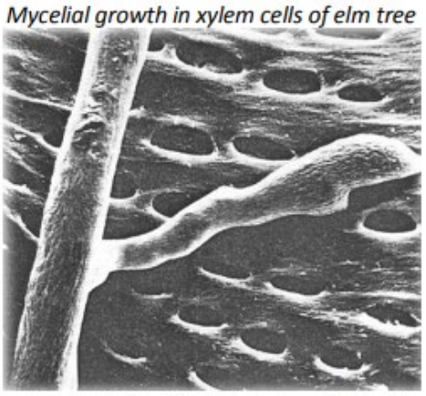


Image: Strobel & Lanier 1981. Dutch Elm Disease

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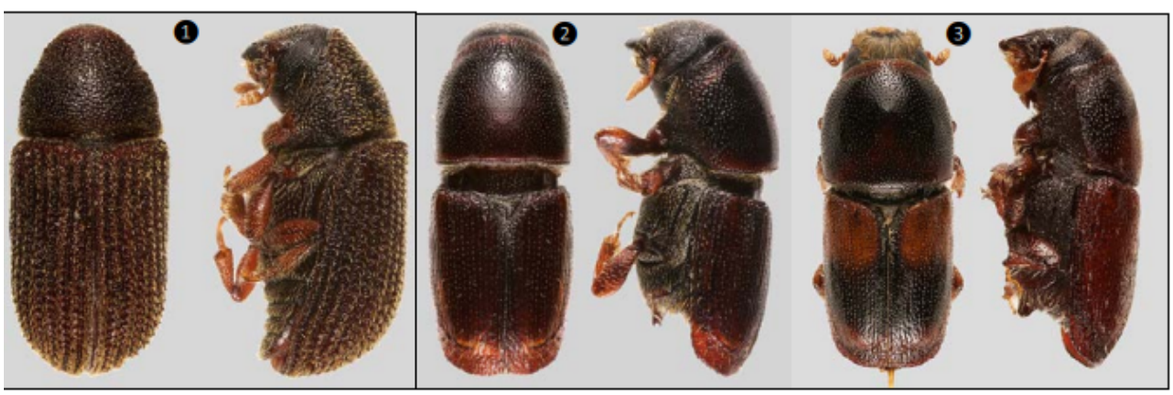
HOST SPECIES

DED attacks both American elm (*Ulmus americana*) and sometimes Siberian elm (*Ulmus pumila*) trees. Older American elms that have not been properly maintained and watered tend to be most susceptible to infection from this fungus.

LIFE CYCLE

Spores of the DED fungus are stored in xylem vessels and reproduce through budding. Dispersal of spores is via the bark beetles that burrow under the bark and lay their eggs in wood galleries. DED can be distributed over long distances in elm logs and in firewood.

There are three species of beetle associated with spreading DED in North America: Native elm bark beetle *Hylurgopinus rufipes* (1), the European elm bark beetle *Scolytus multistriatus* (2), and The banded elm bark beetle *Scolytus schevyrewi* (3). All three varieties of beetles are attracted to healthy elms by host volatile chemicals (kairomones) produced by the trees. Beetles carrying spores of the DED fungus bore into the inner bark and, while feeding, deposit these spores in the wood. The European elm bark beetle feeds in the crotches of twigs; therefore, most infections occur in twigs. The Native elm bark beetle bores in the bark of branches and small trunks, causing infections in major branches.



Images: Guy Hanley, Minot State University

From the point of inoculation, the fungus moves upward and downward by two modes: in the liquid within xylem vessels and through the growth of fungal hyphae between xylem vessels after germination. The DED fungus reaches the roots within one season of infection, where it continues to grow. The fungus grows in the roots and ascends the trunk in a wave of infection that kills the entire tree or a major part of it. Where elms are planted close together, the fungus may move from one tree into the next through root grafting. The fungus can also survive for a time as a saprophyte in dead plant tissue.

SIGNS, SYMPTOMS AND DAMAGE

Foliage symptoms: DED symptoms initially appear as wilted leaves that progress to yellow and, eventually, dried and curled leaves. Where symptoms appear can provide a clue as to the initial site of infection. Upper tree canopy infections are most often due to beetle attack or human contamination. Infections in the lower part of the canopy are often due to root graft DED spread.

Signs and symptoms normally first appear in late spring, but if the tree was infected the previous year and not removed, symptoms may appear in early spring. An elm tree can succumb to DED in several weeks to several years depending on the health and vigour of the tree.

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Characteristic leaf wilt



Image: Saskatchewan Ministry of Environment

Symptoms in upper canopy



Image: Saskatchewan Ministry of Environment

Symptoms in upper canopy



Image: Saskatchewan Ministry of Environment

Symptoms in upper canopy



Image: Saskatchewan Ministry of Environment

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Vascular symptoms: Branches and stems of elms infected by the DED fungus typically develop dark streaks of discoloration in the sapwood. Simply remove the outer bark of an infected branch and view the sapwood to see if discolouration is present. In newly infected branches, brown streaks characteristically appear in the sapwood of the current year.

Characteristic sign of staining in sapwood



Image: Saskatchewan Ministry of Environment

MANAGEMENT PRESCRIPTIONS

There are no known cures for DED-infected American and Siberian elm trees.

Management of the disease includes:

- Rapid disease identification and sanitation of all DED infected wood.
- Treatment of the remaining stump by removing all bark to 10 centimeters below the soil surface or applying a herbicide to the fresh cut surface.
- Monitoring remaining elm trees for symptoms of DED and also undertaking a regular maintenance schedule of elm trees to improve their health and vigour.
- No pruning during the annual pruning ban, from April 1 to August 31.
- Unless authorized, respect regulations prohibiting elm transport, storage and use.

WHAT THE PUBLIC CAN DO

There are two major ways in which the public can participate:

- Do not transport store or use elm firewood.
- Report dead and dying elm trees to local forestry agencies.

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What is Dutch elm disease?



Dutch elm disease (DED) is caused by a deadly fungus that was introduced to North America from Europe in the 1920s. The disease is spread by elm bark beetles that carry the fungus to healthy trees, or by root grafting. The fungus stops the flow of water within an infected tree, quickly killing it.

The American elm is very susceptible to DED, while Siberian elms are usually tolerant. Disease symptoms usually appear first on a single branch, with wilting and yellowing leaves, with more of the tree affected as the disease progresses.

Dutch elm disease has spread through the eastern half of Saskatchewan.



1981 - Saskatchewan's first case was a single tree in Regina in 1981, which was removed. The next detection was in 1990, in a park near Estevan. Since then, DED has become established, spreading east to west along river valleys with native American elm stands, including:

- Cumberland Delta
- Carrot and Red Deer river valleys
- Northeast Qu'Appelle Valley
- Souris River in southeast

Elm tree "look-alikes".

It can be hard to tell the difference between trees just by looking at the bark. American elm bark (left) is rough and coarse, light grey to dark greyish-brown to silver gray, with intersecting "X" or diamond-shaped deep ridges.

American elm



Green ash



Manitoba maple



How can we manage DED to protect Saskatchewan's elms?



As management is challenging in wild stands and rural areas, protection efforts are most effectively focused on urban forests, slowing disease spread by promptly identifying, removing and property disposing of DED-infected trees.

Other management tools include:

- pruning programs;
- beetle population control;
- public awareness programs;
- planting diverse tree species; and
- research.

Do not prune elms from April 1 to August 31.

EXCEPTIONS:

- storm damaged trees
- authorization from a ministry or municipal inspector
- municipal or Crown corp. employees who consider it necessary to ensure public safety or to avoid property damage
- shearing of an elm hedge
- completely removing an elm tree, and treating or removing the stump below ground level.

It is illegal to prune any elms during the annual ban period from April 1 to August 31. Fresh cuts attract the beetles that spread DED, and they're active during this time!

Any time of year, dispose of elm wood properly, using the method and location designated by your local municipality.

Do **NOT** store, transport or use elm firewood.

It is against the law.

No person may store, use, sell or transport any elm tree for use as firewood or for any other purpose without authorization.



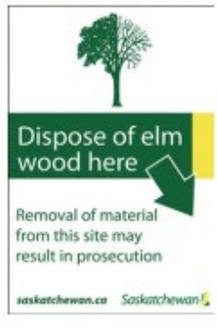


Dispose of elm material properly and promptly.

Dispose of elm wood from pruning removing a tree at the nearest elm disposal site for the municipality in which the tree is located, during the next operating hours of the disposal site.

Operators of elm disposal sites must ensure they dispose of wood in a timely manner by:

- burning all bark from the elm tree; and
- completely burying the elm tree, covered with at least 25 cm of soil.



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Dutch Elm Disease Sample Submission and Diagnostic Form

Dutch Elm Disease Sample Submission and Diagnostic Form			Send samples and forms to: **Crop Protection Lab** **1610 Park Street** **Regina, SK S4N 2G1**
Date Collected: ____/____/____ (YY / MM / DD)	**Crop Protection Lab** Phone: 306-787-8130	**Ministry of Environment** **General Inquiries:** 1-800-567-4224	**Lab #:**

Sampler's Contact Information			
Name	Email		Phone
Address	City	Province	Postal Code
Property Owner's Contact Information (If different from above)			
Name	Email		Phone
Address	City	Province	Postal Code
Tree Location			
Tree Address (Urban)	Land Location (Rural)		Buffer
GPS Coordinates			

Tree #	Species*		Stem Diameter (cm) at 1.3m above ground								# Stems < 5 cm
	Am	Sb									
1											

*Note: Am = American Elm, Sb = Siberian Elm

Comments (Include all additional hazards and removal concerns)

☐ Public Trees ☐ Private Trees ☐ Fence ☐ Overhead Lines ☐ Building

Tree Location Map

N

Diagnostic/Identification (Lab Use Only)

☐ The sample submitted tested _____ for Dutch Elm Disease (*Ophiostoma ulmi*).

☐ No sample submitted – Tree(s) displayed advanced symptoms and Dutch Elm Disease was diagnosed visually.

☐ Other diseases present include _____.

_____ _____

Lab Technician Date